

(1.)
RULES AND REGULATIONS

In. 1345.
PROPOSED BY THE

BOARD OF HEALTH

FOR THE PURPOSE OF PREVENTING THE INTRODUCTION AND SPREADING
OF THE DISEASE CALLED

CHOLERA MORBUS,

The early symptoms of the Disease in its most marked form, as it occurred to the observation
of Dr. Russell and Dr. Barry at St. Petersburg, and
corroborated by the accounts from other places where the Cholera has prevailed, with

THE MOST APPROVED TREATMENT.

Published by a Committee of the Lords of his Majesty's Privy Council.

TO WHICH ARE ADDED,

A WARNING TO THE BRITISH PUBLIC
AGAINST THE ALARMING APPROACH OF THE INDIAN CHOLERA.

BY SIR GILBERT BLANE, BART. F.R.S.

AND THE

HISTORY OF THE EPIDEMIC CHOLERA
OF INDIA,

FROM ITS FIRST APPEARANCE IN THE YEAR 1817, TO 1831, AND THE
DREADFUL RAVAGES IT HAS COMMITTED, WITH THE DATES OF
ITS FIRST APPEARANCE IN THE DIFFERENT PROVINCES.

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1831.

Price Sixpence.

IMPORTANT WORK ON CHOLERA.

Just Published, price 14s, boards,

In one closely printed Volume 8vo., with a Map exhibiting the Progress of the Epidemic Cholera over the principal parts of India, by the dates of its appearance at numerous places, with the Great Roads, &c. &c.

AN ESSAY ON THE EPIDEMIC CHOLERA OF INDIA.

BY
REGINALD ORTON,

Surgeon H. P. late of His Majesty's 34th Regiment of Foot.

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RULES AND REGULATIONS

PROPOSED

BY THE BOARD OF HEALTH.

At the Council Chamber, Whitehall, the 20th day of October, 1831.
By a Committee of the Lords of his Majesty's Most Honourable Privy Council.

Their Lordships this day took into consideration certain Rules and Regulations proposed by the Board of Health, for the purpose of preventing the introduction and spreading of the disease called Cholera Morbus, in the United Kingdom, together with an account of the symptoms and treatment of the said disease; and were pleased to order that the same be printed and published in *The Gazette*, and circulated in all the principal ports, creeks, and other stations of the said United Kingdom, with a view that all persons may be made acquainted therewith, and conform themselves thereto.

W. S. BATHURST.

The measures of external precaution for preventing the introduction of the Cholera Morbus by a rigorous quarantine have hitherto been found effectual, but as the disease approaches the neighbouring shores, not only is the necessity of increased vigilance more apparent, but it is also consistent with common prudence that the country should be prepared to meet the possible contingency of so dreadful a calamity. The intention of the following observations, therefore, is to submit to the public such suggestions as it appears to the Board of Health should either be immediately acted upon, or so far carried into operation, as that, in any case, the country should not be found uninformed as to the best means of providing for its internal protection.

To effect the prevention of the introduction of the disorder, the most active co-operation not only of the local authorities along the coast in the measures of the Government, but likewise the exercise of the utmost caution by all the inhabitants of such parts of the country becomes indispensably necessary. The quarantine regulations established by the Government are sufficient, it is confidently hoped, to prevent the disorder from being communicated through any intercourse with the Continent in the regular channel of trade or passage, but they cannot guard against its introduction by means of the secret and surreptitious intercourse which is known to exist between the coast of England and the opposite shores. By such means this fatal disorder, in spite of all quarantine regulations, and of the utmost vigilance on the part of the Government, might be introduced into the United Kingdom; and it is clear that this danger can only be obviated by the most strenuous efforts on the part of all persons of any influence, to put a stop to such practices; the utmost exertions should be used to effect this end. The magistrates, the clergy, and all persons resident on the coast, it is hoped will endeavour to impress upon the population of their different districts (and particularly of the retired villages along the sea shore), the danger to which they expose themselves by engaging in illicit intercourse with persons coming from the Continent; and

should appeal to their fears in warning them of the imminent risk which they incur by holding any communication with smugglers, and others who may evade the quarantine regulations.

To meet the other objects adverted to in the introduction, namely, to prepare for the possible contingency of the country being visited by this disorder, as well as to assist in its prevention, it is recommended that in every town and village, commencing with those on the coast, there should be established a local Board of Health, to consist of the chief and other magistrates, the clergyman of the parish, two or more physicians or medical practitioners, and three or more of the principal inhabitants; and one of the medical members should be appointed to correspond with the Board of Health in London.

2. Every large town should be divided into districts, having a district committee of two or three members, one of whom should be of the medical profession, to watch over its health, and to give the earliest information to the Board of Health in the town, whose instructions they will carry into effect.

3. As the most effectual means of preventing the spreading of any pestilence has always been found to be the immediate separation of the sick from the healthy, it is of the utmost importance that the very first cases of cholera which may appear should be made known as early as possible; concealment of the sick would not only endanger the safety of the public, but (as success in the treatment of the cholera has been found mainly to depend on medical assistance having been given in the earliest stage of the disease) would likewise deprive the patient of his best chance of recovery.

4. To carry into effect the separation of the sick from the healthy, it would be very expedient that one or more houses should be kept in view in each town or its neighbourhood, as places to which every case of the disease, as soon as detected, might be removed, provided the family of the affected persons consent to such removal; and in case of refusal, a conspicuous mark "*Sick*" should be placed in front of the house, to warn persons that it is in quarantine; and even when persons with the disease shall have been removed, and the house shall have been purified, the word "*Caution*" should be substituted, as denoting suspicion of the disease; and the inhabitants of such house should not be at liberty to move out or communicate with other persons, until, by the authority of the Local Board, the mark shall have been removed.

In some towns it may be found possible to appropriate a public hospital to this purpose; or should any barrack exist in the neighbourhood, it might, under the authority of the commander of the forces, be similarly applied.

5. Wherever it may be allowed to remove the sick from their own habitations to the previously selected and detached buildings, the houses from which they have been so removed, as well as the houses in which the sick have chosen to remain, should be thoroughly purified in the following manner:—

Decayed articles, such as rags, cordage, papers, old clothes, hangings, should be burnt; filth of every description removed, clothing and furniture should be submitted to copious effusions of water, and boiled in a strong ley; drains and privies thoroughly cleansed by streams of water and chloride of lime; ablution of wood work should be performed by a strong ley of soap and water; the walls of the house, from the cellar to the garret, should be hot lime-washed; all loose and decayed pieces of plastering should be removed.

Free and continued admission of fresh air to all parts of the house and furniture should be enjoined for at least a week.

It is impossible to impress too strongly the necessity of extreme cleanliness and free ventilation, they are points of the very greatest impor-

tance, whether in the houses of the sick, or generally as a measure of precaution.

6. It is recommended that those who may fall victims to this formidable disease, should be buried in a detached ground in the vicinity of the house that may have been selected for the reception of cholera patients. By this regulation it is intended to confine as much as possible every source of infection to one spot: on the same principle, all persons who may be employed in the removal of the sick from their own houses, as well as all those who may attend upon cholera patients in the capacity of nurses, should live apart from the rest of the community.

It should here be observed, that the fewer the number of persons employed in these duties the better, as then the chance of spreading the infection by their means will be diminished.

7. Wherever objections arise to the removal of the sick from the healthy, or other causes exist to render such a step not advisable, the same prospect of success in extinguishing the seeds of the pestilence cannot be expected.

Much, however, may be done, even in these difficult circumstances, by following the same principles of prudence, and by avoiding all unnecessary communication with the public out of doors; all articles of food, or other necessaries required by the family, should be placed in front of the house, and received by one of the inhabitants of the house, after the person delivering them shall have retired.

8. Until the time during which the contagion of cholera lies dormant in the human frame has been more accurately ascertained, it will be necessary for the sake of perfect security, that convalescents from the disease, and those who have had any communication with them, should be kept under observation for a period of not less than twenty days.

The occupiers of each house where the disease may occur, or be supposed to have occurred, are enjoined to report the fact immediately to the local Board of Health in the town where they reside, in order that the professional member of such board may immediately visit, report, and, if permitted to do so, cause the patient to be removed to the place allotted for the sick.

In every town, the name and residence of each of the members of the district committee should be fixed on the doors of the church, or other conspicuous place.

All intercourse with any infected town and the neighbouring country must be prevented by the best means within the power of the magistrates, who will have to make regulations for the supply of provisions: but such regulations are intended only for extreme cases; and the difficulty of carrying such a plan into effect on any extended scale will undoubtedly be great, but, as a precaution of great importance, it is most essential that it should be an object of consideration, in order to guard against the spreading of infection.

Other measures, of a more coercive nature, may be rendered expedient for the common safety, if unfortunately so fatal a disease should ever show itself in this country in the terrific way in which it has appeared in various parts of Europe; and it may become necessary to draw troops, or a strong body of police, around infected places, so as utterly to exclude the inhabitants from all intercourse with the country; and we feel sure what is demanded for the common safety of the State, will always be acquiesced in with a willing submission to the necessity which imposes it.

The Board particularly invites attention to a fact confirmed by all the communications received from abroad, *viz.* that the poor, ill fed, and unhealthy part of the population, and especially those who have been addicted to drinking spirituous liquors, and indulgence in irregular habits, have been the greatest sufferers from this disease, and that the infection has been most virulent, and has spread more rapidly and extensively in the districts of towns where the streets are narrow, and the population crowded, and where little or no attention has been paid to cleanliness and ventilation.

They are aware of the difficulty of removing the evils referred to, but they trust that attention thus awakened will ensure the most active endeavours of all magistrates, resident clergymen, and persons of influence or authority, to promote their mitigation; and as the amount of danger, and the necessity of precaution, may become more apparent, they will look with increased confidence to the individual exertions of those who may be enabled to employ them beneficially in furtherance of the suggestions above stated.

Board of Health, College of Physicians, October 20.

The following are the early symptoms of the disease in its most marked form, as it occurred to the observation of Dr. Russell and Dr. Barry, at St. Petersburg, corroborated by the accounts from other places where the disease has prevailed:—

Giddiness, sick stomach, nervous agitation, intermittent, slow, or small pulse, cramp, beginning at the tops of the fingers and toes, and rapidly approaching the trunk, give the first warning.

Vomiting or purging, or both these evacuations of a liquid, like rice-water or whey, or barley-water, come on; the features become sharp and contracted, the eye sinks, the look is expressive of terror and wildness; the lips, face, neck, hands and feet, and soon after the thighs, arms, and whole surface, assume a leaden, blue, purple, black, or deep brown tint, according to the complexion of the individual, varying in shade with the intensity of the attack. The fingers and toes are reduced in size, the skin and soft parts covering them are wrinkled, shrivelled, and folded; the nails put on a bluish pearly white; the larger superficial veins are marked by flat lines of a deeper black; the pulse becomes either small as a thread, and scarcely vibrating, or else totally extinct.

The skin is deadly cold and often damp, the tongue always moist, often white and loaded, but flabby and chilled like a piece of dead flesh. The voice is nearly gone; the respiration quick, irregular, and imperfectly performed. The patient speaks in a whisper. He struggles for breath, and often lays his hand on his heart to point out the seat of his distress. Sometimes there are rigid spasms of the legs, thighs, and loins. The secretion of urine is totally suspended; vomiting and purgings, which are far from being the most important or dangerous symptoms, and which in a very great number of cases of the disease have not been profuse, or have been arrested by medicine early in the attack, succeed.

It is evident that the most urgent and peculiar symptom of this disease is the sudden depression of the vital powers: proved by the diminished action of the heart, the coldness of the surface and extremities, and the stagnant state of the whole circulation. It is important to advert to this fact, as pointing out the instant measures which may safely and beneficially be employed where medical aid cannot immediately be procured. All means tending to restore the circulation and maintain the warmth of the body should be had recourse to without delay. The patients should always immediately be put to bed, wrapt up in hot blankets, and warmth should be sustained by other external applications, such as repeated frictions with flannels and camphorated spirits; poultices of mustard and linseed (equal parts) to the stomach, particularly where pain and vomiting exist; similar poultices to the feet and legs to restore their warmth: the returning heat of the body may be promoted by bags containing hot salt or bran applied to different parts of it. For the same purpose of restoring and sustaining the circulation, white wine whey, with spice, hot brandy and water, or sal volatile, in the dose of a teaspoonful in hot water, frequently repeated, or from five to twenty drops of some of the essential oils, as peppermint, cloves, or cajeput, in a wine glass of water, may be administered; with the same view, where the stomach will bear it, warm broth with spice may be employed. In very severe cases, or where medical aid

is difficult to be obtained, from twenty to forty drops of laudanum may be given in any of the warm drinks previously recommended.

These simple means are proposed as resources in the incipient stages of the disease, where medical aid has not yet been obtained.

In reference to the further means to be adopted in the treatment of this disease, it is necessary to state, that no specific remedy has yet been ascertained; nor has any plan of cure been sufficiently commended by success to warrant its express recommendation from authority. The Board have already published a detailed statement of the method of treatment adopted in India, and of the different opinions entertained as to the use of bleeding, emetics, calomel, opium, &c. There is reason to believe that more information on this subject may be obtained from those parts of the Continent where the disease is now prevailing; but even should it be otherwise, the greatest confidence may be reposed in the intelligence and zeal which the medical practitioners of this country will employ in establishing an appropriate method of cure.

HENRY HALFORD,

President of the Board.

APPROACH OF THE CHOLERA.

The following interesting Address to the British Public has just been issued by SIR GILBERT BLANE, F.R.S. It is entitled "*A Warning to the British Public against the alarming Approach of the Indian Cholera.*" By SIR GILBERT BLANE, Bart, F.R.S.," and is worthy of the most serious attention:—

The writer of this has been irresistibly impelled to this task by a sense of duty to his country, and his unfeigned anxiety for its safety, embracing that of his friends and family, and he will confess, even the small residue of his own life, the remnant of old age and growing infirmities.

In case it should be asked who is he who thus puts himself so forward on this occasion, it is due to the public to answer by showing what claims he has to their confidence.

He has for more than fifty years applied his mind to studies and duties nearly connected with subjects of this nature. His first public situation was that of physician to the great fleets which were employed in the West Indies and on the coast of North America during the three or four last years of the American war. He served for seven years as a commissioner of sick and wounded seamen in the late war. He was dispatched in 1809 by the British Government on a special mission to the island of Walcheren, to inspect and report on the state of an army of nearly forty thousand men then serving in Zealand, and labouring under a most disastrous state of sickness. He has been twelve years of his life physician to St. Thomas's hospital. He may add, that he was engaged for upwards of thirty years in extensive private practice, and was senior physician to his late Majesty George IV during the whole of his reign.

It is not likely that a paternal government, like our own, should be unheedful of the extreme danger of the country, and they accordingly established a Board of Health some months ago, for the purpose of checking the progress of a disease so novel*, so rapid in its progress, so alarmingly near in its approaches; so rapid and so near indeed, that the writer of this ventures to predict, that unless some early, energetic, and well-judged mea-

* There are some obscure notices of it in an ancient writer, and what is believed to be an incorrect description of it in some parts of India about seventy years ago.—(See Dr. B. Hawkins's Description of the Cholera in Russia.)

asures for its exclusion and prevention be adopted, it will be contrary to the analogy of its past progress if it does not make its appearance in the eastern coasts of England and Scotland in a time too frightful to name. And the writer of this cannot in conscience abstain from mentioning, with due deference to the source from which the instructions of the above-mentioned board emanate, that he is humbly of opinion, that it is a material omission in them that the labours of the board are not required to commence till the disease has actually made a landing and taken effect in the country, without reference to such salutary means as might be had recourse to for repelling and barring it out, as it were. This has restricted and rendered in a great measure nugatory the steps that have been hitherto recommended, which consist merely in the publication of some papers descriptive of the steps advisable to be taken for arresting the progress and eradicating the infection when it shall appear; and the contingent good effects of these are also rendered abortive by their being of a nature so coercive and compulsory, that they run the risk of being felt, and perhaps resisted, as incompatible with the liberties and properties of English subjects, an objection expressed by the board itself. Besides, the pamphlet containing the description of the preventive measures is too bulky for the general circulation which would be necessary for giving it effect by stopping and eradicating the disease; and the writer of this understands from his correspondence with the board, that there is no intention of adopting immediately any further means. But from the statement above made such means seem absolutely necessary, and are here thrown into the compass of a single sheet, the fruits of the writer's studies, adapted for an early, speedy, and universal circulation among the British community, particularly in the sea-port towns on the east coast of England and Scotland, which may be readily done by the quick methods of conveyance by sea and land now in use. In making these communications, particular attention should be paid to what may be described as the squalid part of the population. For he again asserts, that should this most terrible of all scourges ever appear on British ground, it would first do so in the eastern coasts fronting the Baltic Sea, the mouths of the Elbe and Weser.

This mention of the squalid population leads the writer to an exposition of the practical means which it is his chief object to propose for repelling, arresting, barring out as it were this enemy, before having to grapple with him on his actual invasion.

The means alluded to are founded on the following law, which this as well as all other species of infection observe more or less in diffusing themselves:—It is found that the squalid population do, by their filth, stench, bad clothing, bad and scanty diet, and other constituents of misery, not only contract and harbour infection, but attract it as it were; inasmuch that it always happens that in such spots it first takes effect, and if there are no such spots the whole community is safe. This will be best illustrated by an example. When the Court left London on occasion of the last plague in 1665, the Lord Chancellor Clarendon, who accompanied them, relates in the history of his own life, that the calamity had fallen almost exclusively on the miserable and indigent, so that on their return they missed very few of their friends and acquaintances. It cannot be doubted that since this great and last plague there has been frequent and abundant importation of the *virus* of infection from the manifold increase of commerce, but that it has proved innocuous from its not finding its proper *nidus*.

Upon such facts are founded certain means not liable to the objection of harshness and illegality, and are applicable before the arrival of the disease, and more likely to be peaceably adopted at the quiet recommendation of an individual than if they proceeded from the hand of power. Instead, therefore, of the business being taken in hand by soldiers, sheriffs' officers, and other emissaries of coercion, certain lenient measures may be adopted

within the ministration of unarmed civilians, such as those in the commission of the peace or heads of corporations, and above all of the clergy.

It is said somewhere that cleanliness is next to godliness, a text which might most appropriately be discussed from the pulpit; at any rate by domiciliary admonitory visits, lying so admirably within the sphere of clerical duty. But if brooms, mops, and soap are objectionable, on the score of dignity, the same cannot be said of intemperance, for the censures of which no words can be found adequate; for referable to this vice are not only the loss of health, premature death, and individual suffering, but idleness, sedition, and extinction of, and indifference to, all religious obligations and relative duties, as proved by the vicious application of wages imperfectly earned in consequence of the debility, ill health, and sloth induced by such habits, to allay the cravings of a depraved appetite, instead of providing bread for themselves and their families. And were not the disgraceful outrages, the delirious madness and wickedness which broke out this time last year chiefly imputable to the same cause? I allude to the destruction of human subsistence by fire, and of the renewal of which there is now some appearance.

Now, what I mean, with the utmost humility and deference but earnestness, such as are due to those whom I address, the truly reverend and respectable body of the British clergy, is to suggest what has been deeply imprinted on my own mind by my professional pursuits, that the excruciating sufferings attendant on the disease in question are such, that if inculcated with due gravity as a sanction of those persuasive admonitions which might be addressed to the labouring poor, it is impossible but that practical and efficient impression would be made even on the most ignorant and obdurate subjects. I am sensible that some apology is due on my part for this presumption, but a little explanation will I apprehend remove all cause of offence; for, without such information as medical men alone are qualified to furnish, clergymen could not be aware of the power of the instrument which is put into their hands; they could not be aware that this disease may, with truth, be painted as one which is, of all others, attended with such horrible torments, as, adequately appreciated and described, may be deemed in effect of equal potency with the gallows as a dissuative to vice, certainly far more terrible than transportation for life. Very few indeed escape with their life; and temporal punishments have the advantage of proximity over those denounced in the life to come. The only palliating circumstance is the shortness of the interval between the attack and the grave. But how is this passed? In the midst of health the enemy strikes like lightning, clings to the victim, inflicting the most horrible agonies, throwing the whole frame, limbs, body, and vitals into* convulsive and spasmodic sufferings, comparable only to the unutterable anguish said to be inflicted by the inquisition. Of natural diseases the nearest approaching to it is probably one of rare occurrence, named *Ileus*† and *Miserere* in Latin, the *Iliac passion* in common parlance.

Before proceeding further it is my wish to settle the exact import of certain terms.

The epithets *contagious* and *infectious* I employ as synonymous; but I avoid the use of both as much as possible, and comprehend them both under the term *communicable*. It is also desirable with a view to perspicuity to state, that of the two terms *epidemic* and *endemic*, both denoting diseases of a general and simultaneous prevalence in a great community, I understand by the former (*epidemic*) those which proceed from the exhalations or secretions of a body labouring under the same disease; of this the plague may serve as an example:—by the other (*endemic*) is meant a

* In some rare cases the limbs are thrown into the most hideous convulsions a few hours after death, a circumstance not recorded in any case either ancient or modern.

† It was the great good fortune of the writer of this to attend successfully a personage of the most exalted rank in this realm in an attack of this disorder.

disease which proceeds from the exhalations of the earth, of which intermittent fever, commonly called ague, may serve as an example. The want of attention to this simple distinction has given occasion to an incredible amount of unintelligible *jargon* and multiplied sophistries in the wearisome controversy regarding contagion. I need not add that the epidemic alone are contagious, that is communicable; the other, the endemic, never so.

And in order to disentangle the subject from further risk of ambiguity, it is only necessary, in addition to the discriminating character already mentioned, to enumerate a few of the most remarkable peculiarities, particularly those marking its difference from the English cholera, recurring *endemically* in the end of summer and beginning of autumn. The discharges in Indian disease consist of a liquid resembling thin gruel: in the English disease they are feculent and bilious. The origin and main seat of both is the bowels; and I repeat, that after striking a person apparently in good health like lightning, it never quits him till, throwing his whole frame, vitals, body, and limbs, into a state of suffering incomparably more violent than the English malady, it destroys life in a few hours, frequently in a single hour or less. If there is any disease known in England, which is in point of suffering comparable to the former, it is the *ileus* already mentioned. But the most important difference, politically considered, is, that the Indian cholera has now, after long discussion and controversy, been admitted to be *communicable*, whereas the English has never been suspected of this.

And as there is no way more simple and convincing to establish the communicable nature of the disease now in question than a short narrative of its origin and progress from the mouth of the Ganges to the shores of the Baltic and the banks of the Elbe, its interesting though melancholy history may here be related.

Its origin can be distinctly traced to a place called Jessore, near one hundred miles N. E. of Calcutta, to which it was brought in August, 1817, in consequence of some obscure occurrence of unwholesome circumstances affecting the natives, such as have been known in other instances to have created new diseases in Great Britain and other parts of the world. Preparations were then making for the Pindarree war, by the assemblage of a military force, its stores and baggage, which moved up the Ganges to Upper India, accompanied by this epidemic, and spreading it on all sides against the periodical monsoon to the skirts of the Himalaya mountains, in an irregular manner peculiar to itself, and continued to cling to the army in its movements, which were next directed to the southward, in the direction of the presidency of Bombay, which place it reached in August, 1818, still attended by the epidemic in its peculiarly desultory and anomalous manner of progress. From hence it took a direction eastward, crossing the Decan, still pursuing the line of human intercourse and the seat of war till it reached the coast of Coromandel, along which it took a southerly direction, till it reached that part of it which lies abreast of Ceylon, from the northern extremity of which it is distant about half a degree of latitude. The transition therefore was easy, and was made at this very point, called Jaffnapatam, from whence it spread rapidly, making dreadful ravages. At one of its ports, called Trincomalee, it got on board of the shipping, and broke out in the *Topaze* frigate, in which several men were seized and died; and that vessel having sailed from thence with the disease on board for Mauritius, a voyage of three thousand miles, she arrived there in the end of October, and the disease appeared there in less than three weeks, where, by the report made by the governor, it prevailed to the loss of seven thousand lives, the disease having there not been believed to be communicable. From the coast of Coromandel and Ceylon it took a direction eastward. Crossing the bay of Bengal it made its appearance on the opposite coast, from whence it made its way through the Straits of Malacca and Sunda, and through the great Indian Archipelago to China,

where it first appeared in October 1820. It ought to have been remarked in relating what happened at Mauritius, that though the devastation was most deplorable, an instructive fact arose out of it; for in the neighbouring Island of Bourbon, which, though belonging to France, maintains a frequent intercourse with Mauritius, the disease was barred out by a rigorous quarantine, the Governor being impressed with the conviction of its being communicable. There was indeed an exception, which corroborated the proof; for in consequence of a contraband vessel of one island having intercourse with one belonging to the other, about two hundred lives were lost between the harbour and the gate of the town, where it was so effectually arrested by rigorous separation, and sending the subjects affected to the lazaretto, that no more cases occurred. Through another communication by sea it was carried from Bombay to Persia in 1821, by the trade carried on through the Gulf of Ormuz, so as to diffuse itself through the whole of that empire, with the exception of the two great cities of Teheran, the seat of government, and Isphahan, which were believed to have been saved by the government ordering the caravans, the route of which this disease had followed, to pass by another route; and this inference is corroborated by its having re-appeared at Teheran in the year 1829, a year in which the precaution above-mentioned had been neglected.

In accordance with the sketch which has thus far been drawn of its progress, the reader will be prepared to learn that this pestilence was conveyed to the mouth of the Tigris, a river falling into the Gulph of Ormuz, from whence, through Bussora and Bagdad, it spread by the caravans to Syria and its towns on the Levant, so well known in European commerce*; and that by the mouths of the Volga falling into the Caspian Sea it spread to Astracan, opening a wide door into Russia, through which it spread in 1823. Since this time it has been threatening the whole civilized world, having reached Moscow the same year. Its having next appeared at Orenburgh on the confines of Siberia, then at Petersburg, and through it at Riga and Dantzick, and other mercantile towns of the Baltic, is too recently known to require a detailed narrative. But its arrival at Berlin and Vienna in the course of the present year has rendered the alarm too serious to be any longer neglected, and we are assured by the Continental Journals that it has broke out in the country lying between the Baltic and the Elbe, the aboriginal residence of the same Anglo-Saxons who visited and treacherously overran a certain kingdom, on which they stamped their name about thirteen or fourteen hundred years ago; and the same winds may, in not many hours, waft the infectious matter to our coast†.

Having made this exposition of the progress of the malady, I wish to put the question to any man of sound intellect, that is, any one whose mind is not disqualified by imbecility or prejudice to judge, whether he can deny, nay, whether it is in his power to resist the conviction, that this is a communicable disease. How, indeed, is this possible in contemplating the continued communication of it by human intercourse over continents and islands, seas and oceans, and without its appearance in any other place, to which it cannot be traced to that line? The main, and I believe the only plausible cause of this error has been the great numbers that have escaped the disease, though equally exposed to the cause as those who have been attacked by it. But let them reflect for a moment, what is known to every peasant, that the same holds true with regard to the ordinary diseases admitted by all to be communicable, such as small-pox and measles. And though all communicable diseases have this in common, they all

* It is remarkable enough, that while the great Oriental epidemic appeared thus on the eastern extremity of the Mediterranean, the great Western pestilence, the yellow fever, was raging at its western extremity, Gibraltar, Malaga, Barcelona, Leghorn, &c.

† Aleppo was also attacked, where 200 persons confined at the residence of the French Consul escaped the malady.

differ, not only as to the proportion of those left unaffected, but as to the rate of mortality of those actually affected; also as to the susceptibility in various temperatures and climates. In the small-pox and measles, for instance, many are left unaffected, and with a smaller degree of mortality than in the plague and yellow fever; the two former have also a wider range, for they spread into every corner of the habitable world; whereas the two other are only known in certain climates and degrees of temperature; and in this respect it is remarkable that the two latter differ much from each other, for the plague has never been known in the torrid or frigid zone; and the yellow fever has hardly been known but in an atmospheric temperature at or above 80 degrees †.

On the retrospect of this it is impossible not to have some feeling for those who have, either ignorantly or too hastily, neglected preventive precautions; for on the supposition that the disease in question and some others are really communicable, the inference is unavoidable, that not only thousands but myriads have perished by the want of such precautions.

Besides the arguments arising out of the history of its origin and progress, there is one founded on physical principle, which by a strange misconception has been enlisted on the side of non-contagion: the principle is, that the vast numbers who escape the Indian cholera is a proof of its proceeding from the atmosphere, and not from the living morbid human body. Now, what can be more obvious than that if it proceeded from the atmosphere not a single subject could escape, for every human being, in common with all living creatures, must communicate either by respiration or otherwise with the vivifying principle of the atmosphere, whether pure or contaminated; whereas, if it proceeded from the breath or perspiration of the living morbid being, it is not only conceivable, but certain, that vast numbers must escape by never coming within the sphere of the morbid exhalations of the sick. And as it is of the utmost moment that there should not remain "a hinge on which to hang a doubt" on this question, lest it should relax the zeal of those whose duty it is to exclude and extinguish this horrible epidemic, the following argument must be added, founded equally as the other on the incontrovertible nature of things. For is it not conformable to the purest maxims of reason, that if the cause of this disease consist in some general affection of the atmosphere which all must breathe, it will not be limited to any particular boundary of space or time, that is, it will be contemporaneous among the community resident in a district; whereas if it proceeds from the human exhalations, it must follow exclusively the movements of those affected by it? and as this is the case as a matter of fact and observation in the cholera, it follows that it must be communicable, epidemic, and progressive, not like agues, confined to one and the same condition of the atmosphere.

As it is another peculiarity of this dreadful impending disease to require above all others an early and energetic practice, it is of the last importance that as many as possible of the community at large should have some knowledge of what should without a moment's loss of time be put in practice, and the first seizure is so striking that there can be no excuse for delay. It is important to observe that there is a certain characteristic which pervades all the stages of this disease, namely, that there is a notable prostration of the whole powers of life, and as this holds true also of those who are most susceptible, this practice applies to diet as well as medicine; so that those who can afford it will do well, in order to fortify their constitutions against an attack, to adopt a generous but perfectly temperate and moderate style of life. In case of an actual attack, the proper medicines to have in readiness for administration are tincture of opium, more commonly known by the name of laudanum, which ought to be given in some warm cordial drink to the amount of about sixty drops; that is, a middle-

† And the Indian cholera is not prevented from spreading by any temperature or climate.

sized teaspoonful, with a table-spoonful of spirituous liquor — brandy has been chiefly recommended. This ought to be repeated in two or three hours, by which time medical assistance may probably have arrived. In the mean time a hot bath ought to be prepared, and some hot nourishing broth. The remedies on which most dependence have been placed next to those above mentioned are calomel, in the dose of twenty grains, and blood-letting. Among the secondary remedies may be mentioned some of the essential oils, such as that of peppermint and cajeputa.

In case the reader should discover some want of proper style and arrangement in the preceding pages, the writer begs to offer as an apology his age and infirmities, as well as the urgent necessity of a speedy circulation of the knowledge contained in them; and it was necessary to depart somewhat from technical words and phrases, this tract being intended for the perusal of those who may be designated *laymen*, as distinguished from those who are members of the profession.

THE HISTORY

OF THE

EPIDEMIC CHOLERA OF INDIA,

FROM

Its appearance in the year 1817, to 1831, and the dreadful ravages it has committed, with the dates of its first appearance in the different provinces.

A VERY malignant form of this disease suddenly appeared on the 28th of August, 1817, at Jessore, a town situated about one hundred miles north-east of Calcutta. From twenty to thirty died daily, and although the inhabitants became at length terrified, and deserted their habitations, 6,000 perished in the short space of a few weeks. It rapidly spread through the neighbouring country to Dacca, Patna, Dinapore, and Nuddea. In September it reached Calcutta, and since that time the metropolis of British India has been regularly invaded by it, during every succeeding season. In November, when the English army were preparing to go out to battle with the Hindostan Chiefs, it attacked its central division, and in ten days destroyed 764 officers, and 8,500 men. From Calcutta it travelled westward to Bahar, and from Bahar northward to Benares, Lucknow, Cawnpore, and Delhi. It then directed its course southward to Agra, Hussingabad, and Nagpore. From Nagpore it again struck off in a south-west direction to Aurungabad, then to Panwell and Poonah; and by the second week in September, 1818, it took up its residence in Bombay, on the western coast of the Indian Peninsula.

Notwithstanding this rapid journey from Jessore to Bombay, it was equally active in its movements along the Coromandel coast, in reaching Madras; for, while it was shooting northward from Jessore to Dacca, it was at the same time penetrating southward to Chittagong. By the 20th of March it had entered Ganjam, it reached Aska in April, in May it was at Vizianagram, at Mazulipatam in July, and on the 8th of October, 1818, it had entered Madras, about a month after its appearance in Bombay. Now, when it is considered, that during the winter months the cold had rendered it inactive, it will appear that this pestilence traversed the whole Peninsula of India, or about 66,000 square leagues, in less than a year!

It is not our intention to enumerate and describe the various irruptions which cholera has made from that period to the present time in British India: suffice it to say, that with the exception of the winter seasons, it

has unceasingly preyed upon our eastern settlements. Towards the close of each November, it only hybernates to rest, that on the approach of spring it may burst forth afresh to repeat its injuries; and although it has thus swept, with the besom of destruction, its towns and its rivers upwards of fourteen times, it still finds fresh victims for the slaughter, and it still betrays a poison as malignant and as unmanageable as ever. Even the inferior animals are said not to be exempt from its influence. On its first appearance, a great number of cattle died in a most extraordinary manner, in the grand army of India. During the October of 1827, many of the dogs in the streets of Calcutta were attacked with choleric symptoms, and killed. Mr. Chalmers observes, that in the towns near the hills, where the epidemic was so fatal, a disease occurred among the cattle, which kept pace with, and often exceeded in mortality, that of the human species. According to Dr. Ranken, goats and camels died of it in Rajputana; and it would appear that at Vercelli, in Italy, the same phenomena sometimes occur, when the ordinary cholera is more than usually severe. Mr. Searle examined some ducks, which he was convinced died of cholera, and he found in their stomach and bowels the same appearances which are discovered in the human subject after death.

A few months after its first appearance at Jessore, and while it was travelling through the northern provinces, it began to ravage along the eastern shore of the Gulph of Bengal; and in 1819 it reached the kingdom of Arracan. From Arracan it extended itself into Siam, and after destroying 40,000 in Baku, the capital of that kingdom, it passed into the Peninsula of Malacca. In October, it entered the islands of Sumatra and Penang; Java and Borneo afterwards suffered; Canton was attacked in 1820, and at Pekin its mortality was so frightful, that the government were obliged to have the dead interred at their own expense. From China it passed to the Philippine and Spice Islands. Thus, in little more than two years, did it traverse a space in Eastern Asia, which from north to south is not less than 1,300, and from west to east 1,000 leagues, in diameter.

Two months after the cholera entered Madras, it travelled along the eastern shore of the Peninsula, through Arcot to Palmacottah, from whence it traversed the strait, and entering the province of Jaffa, which is opposite to Palmacottah, it penetrated into the capital of Ceylon, which is situated in the very centre of the island. About the same period the Mauritius was attacked; and on the 14th of January, 1820, it appeared at the town of St. Denis, in the Isle of Bourbon, which is only forty leagues south-west of the Mauritius. In July, 1821, it betrayed itself at Muscat, on the southern extremity of the Arabian Peninsula. The neighbouring islands of Ormus and Kishme, in the mouth of the Persian Gulph, were shortly afterwards infected; by August, it had ascended along the eastern coast of Arabia, as far as the island of Bahrein; and not long after, it entered Bassorah, on the northern extremity of the Persian Gulph. Opposite the little island of Ormus is the port of Bender-Abassi, in Persia, the principal seaport town in which the Persians conduct commerce with British India. The cholera broke out here with so much violence, that the bazaars were closed, and the dead left unburied. Those who escaped its first onset abandoned their houses, and sought for safety in flight. Shiraz, which is about 100 leagues north-west of Bender-Abassi, manifested symptoms of the pestilence in September, and during the first nine days, 4,500 persons perished. Yezd afterwards suffered, and by the time the disease had reached Ispahan, the cold season had far advanced, so that its severity was much lessened, and it soon wholly disappeared. On the recommencement of spring, however, it developed itself afresh, and spreading from Ispahan, where it had wintered, round the contiguous Persian provinces, it visited in succession Kermanshah, Cashan, Khom, Casbin, and Tauris, following, as it invariably did, whether in Asia or Europe, the great commercial lines of national intercourse. At Tauris, 4,800 perished in the short space of

twenty-five days, when it left the town, and travelled on through Khaz, Erivan, and Kars, to Erzeroum on the southern shore of the Black Sea. The Prince Royal of Persia had driven the Turkish army into this town in the month of July; but immediately after his victory, cholera broke out with such devastating fury among the Persian forces, that from thirty to forty died daily, and the soldiers became so dispirited, that they precipitately retreated, and left the prince with his ministers to sign an armistice at Khoé.

Before the disease quitted Bassorah in 1821, from 15,000 to 18,000 of its inhabitants were destroyed; and so dreadful was the havoc which it made in the surrounding country, that Dr. Meunier says, the third of the population fell before it. At Bagdad it was so prevalent, that a Persian army, which was marching against the town, were compelled to withdraw, but were pursued by the pestilence, and among the other losses which it sustained, their commander fell. In the spring of 1822, it appeared between the Tigris and Euphrates; in July it attacked Mosul, which is about sixty leagues north of Bagdad, and then travelling more westward, it passed through Merdine, Diarbekir, Orfa, Birri, and Antab, on its way to Aleppo, in Syria, which it reached in November. During the winter, as usual, it lay dormant, but in the spring of 1823 it revived, and visited Latakia, Antioch, Tortosa, Tripoli, and other towns on the borders of the Mediterranean Sea. By the end of July it had advanced in the direction of Sarkin, Arsous, Khankaramout, and the Gulph of Alexandretta; and passing over the high mountains of Beylam, it entered the towns of Adena and Tarsous. In 1824, it appeared at Tiberias, in Judea.

Thus have Arabia, Persia, Mesopotamia, and Syria, been overrun by cholera in little more than two years; traversing every species of country, from the arid deserts of Irac-Arabia, to the succulent banks of the Euphrates, and depopulating almost every village in its path with a pertinacious obstinacy which human skill was seldom able to overcome. It will be seen that the disease, during this journey, took two distinct routes through these countries, which it prosecuted with equal energy. By the one it penetrated Arabia, attacked Bassorah, ascended the Euphrates, ravaged Mesopotamia, and finally appeared in Syria, where it committed frightful havoc among the towns skirting the Mediterranean Sea. By the other it travelled through the very centre of Persia, until, in 1823, it reached the shores of the Caspian.

Early in September, 1823, it entered Astracan, a large and populous town seated on the northern shore of the Caspian, at the mouth of the Volga. The Russian fleet were first infected, but two hundred and sixteen persons were all who fell ill, and of these one hundred and forty-four died. As soon as it became known to the Russian Government that Astracan was invaded, they dispatched a medical commission, composed of six physicians, to investigate its character; a physician was sent into Persia with the same view; a board of health was established at Petersburg, and every exertion was made to prevent its extension farther north. How far such preventive measures were connected with the result it may be difficult to decide; but certain it is, that the disease got no farther in that direction that year than Astracan, and did not again appear in Russia until towards the close of 1828, when it unexpectedly entered the town of Orenburg, as is supposed by some through the caravans which came from Upper Asia, and by others, through the Kirghis-Cossacks, who neighbour Orenburg, and are said to have been infected by the disease. As the cold season commenced shortly after its appearance, the mortality which it occasioned was not great until the spring of 1829, when it raged with great severity, both in the town and neighbourhood, and entered the forts of Rassyphaya and Isetzk. On the 31st of July, 1830, it again appeared in Astracan; by the 10th of August, 1,229 were ill, of whom 433

died; and by the 27th, no fewer than 4,043 within the town, and 21,268 throughout the province of which it is the capital, perished. After committing this unprecedented destruction, it pursued a north-west course along the banks of the Volga, making tributary to its power the populous towns of Saratoff, Penza, Samara, and Kazan. Kazan it reached on the 5th of September, and on the 26th of the same month its symptoms were first detected in Moscow. The town was immediately divided into forty-seven compartments, which were separated from each other by a *cordon sanitaire*; ten temporary hospitals were erected, and Count Zakrewski, the Minister of the Interior, was appointed by the Emperor to superintend these protective arrangements. The Emperor himself visited the town when the disease was at its height, and when he left to go to Twer, by submitting to a quarantine of eight days, he gave an example of obedience to the sanitary laws. During the first ten days of October, 747 died; from the 10th to the 20th, 958 perished; and from the 20th to the 31st, 1,284 sunk under the disease. At first the mortality was as great as nine-tenths; it afterwards diminished to seven-eighths, five-sixths, three-fourths, one-half, and ultimately to one-third. During even the winter months, which had been hitherto a complete specific against its progress, when all the rivers were covered with ice, it carried on its work of death; but the number who were infected gradually decreased, and the mortality proportionally diminished.

Having now travelled so far north, it was almost universally expected that the cholera would have soon reached Petersburg, and from thence have extended to the shores of the Baltic; but the capital at this time escaped, and the disease, taking an almost opposite direction, accompanied the Russians into Poland. During the revolution of July, in 1830, a body of troops were ordered out of the province of Koursk, in the country of the Cossacks, which was then infected, to march against the Poles. These troops, in their passage through Podolia and Volhynia, took with them the disease along their entire line of march. The towns of Astrog, Zaslaw, and Luck, were infected; and a few leagues from this latter place the disease passed the Bug, and entered Poland. Lublin was attacked towards the end of March, 1831; by the 1st of April, the hospitals of Siedlec were filled with Russians labouring under the malady; ten days afterwards it was discovered among the wounded at Praga, which is separated from Warsaw only by the Vistula; and on the 14th it entered the capital of Poland. According to the Central Committee of Health, from 100 to 150 died during the first week, out of every 1,000 sick; and according to the *Berlin Gazette*, during thirteen days, ending on the 5th of May, there had been between the town and the camp 2,580 sick, of whom 1,110 died, and 1,278 still remained under treatment. On the 8th of May, Ostralenka, Lomza, Szczuczyn, Drohiczyn, Pultusk, Makow, Nesielskal, and Plousk, were ill; on the 24th it appeared at Polangen; on the 25th at Riga, and by the 28th it had reached Dantzic in Prussia, Brody and Lemberg in Austria. On the 26th of June the disease entered Petersburg; early in August it appears to have invaded Hungary, and by the beginning of September it had entered Germany, and was travelling rapidly towards Vienna.